Enhanced Linked Virtual Information System (ELVIS)

Software Requirements Specification
(SRS)

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1.0 Scope

1.1   Identification

This Software Requirements Specification (SRS) establishes requirements for the Computer Software Configuration Item (CSCI) identified as the Enhanced Linked Virtual Information System (ELVIS). Hereafter the CSCI will be referred to as either ELVIS or "the system."

1.2   System Overview

ELVIS is a web-based Command, Control, Communications, Computers, and Intelligence (C4I) system designed to meet the data display and dissemination needs of shore-based command centers, battle group/force commanders, subordinate warfare commanders, and unit ship commanding officers. The ELVIS CSCI provides core functionality which enhances and extends the user's "reach" into JMCIS. Specifically, the system must interface with Unified Build (UB) and the Operations Support System (OSS) to display and correlate a variety of tactical data. This data is displayed via a web browser interface and provides extensive query and navigation capabilities. The system is available for situation monitoring, situation awareness, situation comparison (between different sites), and decision analysis. The data is distributed via standard Hyper-Text Transfer Protocol (HTTP) using TCP/IP socket connections between the web browser and the web server.

ELVIS provides the foundation and building blocks for rapid growth in the use of Web technology for C4I. This approach:

- Enables low-end, low-cost hardware (e.g., PCs, MACs) to access tactical data.

- Extends the "reach" of users across the WAN.

- Uses intelligent (warrior) pull of data vice "firehose" broadcast methodology.

- Uses bandwidth in an efficient manner (e.g., via proxy server, browser cache).

- Ensures interoperability in the Joint community (as an extension of UB).

- Simplifies testing, certification, and especially operator training.

- Reduces life-cycle cost.

1.3   Document Overview

The purpose of this document is to specify the engineering and qualification requirements for ELVIS core functionality.

Notes

2.0 Applicable Documents

2.1 Government Documents

The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between documents referenced herein and the contents of this specification, the contents of this specification shall supersede. Copies of specifications, standards, drawings, and publications required by suppliers regarding specified functions of this SRS should be obtained from the contracting agency, or as directed by the contracting officer.

- *APP-6 Military Symbols for Land Based Systems*, North Atlantic Treaty Organization (NATO), July 1986.

- DI-MCCR-80025A: *Software Requirements Specification (SRS)*, 29 February 1988.

- DI-MCCR-80026A: *Interface Requirements Specification (IRS)*, 29 February 1988.

- DI-CMAN-80008A: *System/Segment Specification (SSS)*, 29 February 1988.

- DI-E-3102A: *Prime Item Development Specification (PIDS).*

- DI-E-3102A: *Critical Item Development Specification (CIDS).*

- DOD DIR 5200.28: *Security Requirements for Automatic Data Processing (ADP) Systems,* 1978.

- DOD D 5200.28-M: *Security Requirements for Automatic Data Processing Systems*, 18 December 1972.

- DOD M 5200.28-M: *ADP Security Manual.*

- *DOD Standard Internet Protocol; Defense Advanced Research Projects Agency (DARPA)*, January 1980.

- DOD-STD-1521A: *Technical Reviews and Audits for Systems, Equipment, and Computer Programs,* 1 June 1976.

- DOD-STD-2167A: *Military Standard Defense Systems Software Development,* 29 February 1988.

- DOD-STD-2168: *Defense Systems Software Quality Program,* 29 February 1988.

- *ELVIS (Version 1.3.1.1) System Administrator Guide*, SPAWAR, 4 July 1996

- *ELVIS (Version 1.3.1.1) User Manual*, SPAWAR, 4 July 1996

- *Functional Description Document for the Enhanced Linked Virtual Information System (ELVIS Version 1.3.x)*, SPAWAR, 4 July 1996

- *Field Manual 101-5-1, Operational Terms and Symbols*, Headquarters Department of the Army, 21 October 1985.

- *Global Command and Control System (GCCS) User Interface Specification*, October 1994.

- *Group Data Base Management System Specification*, SPAWAR-B-832, Rev. A, 15 February 1993.

- *Installation Procedures for the Enhanced Linked Virtual Information System (ELVIS Version 1.3.1.1)*, SPAWAR, 4 July 1996

- *JMCIS Supplement to the GCCS UIS*, SPAWAR, March 1995.

- *JMCIS User Interface Specification*, SPAWAR, February 1994

- Joint Publication 6-04, *U.S. Message Text Formatting Program*, 1 October 1992.

- *Joint Standardization Group/Tactical Command and Control, and Communications Systems Interface Design Handbook*, Volume III, Book 5, C3 Systems Directorate Joint Chiefs of Staff, May, 1984.

- *Joint Standardization Group/Tactical Command and Control, and Communications Systems Interface Design Handbook*, Volume III, Book 5, C3 Systems Directorate Joint Chiefs of Staff, 15 April 1993.

- *Joint Tactical Air Operations Message Standards*, JCS Pub 6-01.1.

- MIL-E-16400G: (Safety Standards).

- MIL-STD-490: *Specification Practices.*

- MIL-STD-1472C: *Human Engineering Design Criteria for Military Systems, Facilities, and Equipment.*

- OPNAV 5239.1B: Department of the Navy Automatic Data Processing Security Program.

- OS-OTG: *Operational Specification for Over-the-Horizon Targeting GOLD*, Navy Center for Tactical Systems Interoperability, Rev. B, 1 July 1994.

- *Overview of the Overlay Capability Required by USMC Systems*, MCTSSA, GISD-02C, W. Stephenson, 10 August 1994.

- *Version Description Document for the Enhanced Linked Virtual Information System (ELVIS Version 1.3.1.1)*, SPAWAR, 4 July 1996

- *Version Description Document for the Web Status of Forces (WEBSOF Version 1.3.0.1)*, SPAWAR, 15 May 1996

- *WEB Status of Forces System Administrator Guide (WEBSOF Version 1.3.0.1),* SPAWAR, 15 May 1996

2.2   Non-Government Documents

The following documents of the exact issue shown form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of this specification shall supersede. Technical society and technical association specifications and standards may be obtained from libraries. They are also distributed among technical groups and federal agencies.

- 2-Way Link-11 Functional Design Document, INRI, March 1994 (Draft).

- Interface Design Document for the Common Army Common Operating Environment (ACOE) Support Software (CASS) Common Operating Environment (COE) Communications Software, SAIC, 28 June 1995.

- JMCIS Functional Design Descriptions (FDDs).

- JMCIS Security Manager's Guide, INRI, March 1996.

- Joint Maritime Command Information System (JMCIS) Common Operating Environment (COE), Rev. 1.3, INRI, 14 February 1994.

- JOTS II Software Design Document (SDD), INRI, September 1992.

- JOTS II Software Test Description (STD), INRI, February 1992.

- Unified Build Administrator's Guide, INRI, March 1996.

- Unified Build Software Development Environment (UB SDE) Application Programmer's Interface Documentation, INRI, November 1995 and March 1996.

- Unified Build Training Manual, INRI, March 1996.

- Unified Build User's Guide, INRI, March 1996.

Notes

3.0 Requirements

The engineering requirements defined and specified for this system are derived from the following sources:

- JOTS I, Joint Visually Integrated Display System (JVIDS), and Flag Data Display System (FDDS) programs

- JMCIS Requirements Working Group (JRWG)

- Direct Fleet input to SPAWAR PD70E

- SPAWAR PD70E as an engineering authority

- Anti-Drug Network (ADNET)

- Common Aspects of Operational Requirements for various JMCIS programs as allocated to UB by the JMCIS Change Control Board.

- Numerous and various vendor homepages, especially Microsoft, Netscape, CERN.

3.1 Required States and Modes

There are no distinct states or modes of operation for ELVIS.

3.2 System Capability Requirements

The following subsections describe the communications, database management, analysis, correlation, and display options which the system provides:

- Communications (3.2.1)

- Common Tactical Display Management (3.2.2)

- Tactical Database Management (3.2.3)

- C^4I Applications (3.2.4)

- System Support Functions (3.2.5)

- Security Management (3.2.6)

- Administration Features (3.2.7)

3.2.1 Communications

These subsections describe communications requirements:

- Interfaces (3.2.1.1)

- Message Logs (3.2.1.2)

- Uniform Resource Locators (3.2.1.3)

3.2.1.1 Interfaces

The system shall interface to a web server using the standard Common Gateway Interface (CGI) specification.

The system shall be available to users with valid accounts and appropriate access permissions, as maintained in the access control list (ACL) file for each directory. All communications between a web browser and the web server is via standard HTTP over TCP/IP. The web server's port number shall be automatically assigned during installation to avoid conflict with active port numbers. The system administrator shall be able to change the port number by modifying a configuration file.

The web server will send error messages to browsers, in accordance with standard HTTP error protocol. The web server will log all server errors and user actions in logs for viewing by the system administrator.

3.2.1.2 Message Logs

These subsections describe message logs:

- Incoming Message Log (3.2.1.2.1)
- Outgoing Message Log (3.2.1.2.2)

3.2.1.2.1   Incoming Message Log

A default incoming message log with a maximum of 1000 messages (consistent with UB's inventory) shall be available. The incoming message log shall be viewable in a summary window that includes identification information for each message. The operator shall have the ability to the sort the message list according to any column in the summary window. The operator shall have the ability to view any message that has not been deleted. The operator shall also be able to print a copy of the raw message.

3.2.1.2.2   Outgoing Message Log

A default outgoing message log with a maximum of 1000 messages (consistent with UB's inventory) shall be available. The outgoing message log shall be viewable in a summary window that includes identification information for each message. The operator shall have the ability to the sort the message list according to any column in the summary window. The operator shall have the ability to view any message that has not been deleted. The operator shall also be able to print a copy of the raw message.

3.2.1.3 Uniform Resource Locator (URL)

The system shall allow the system administrator to add URLs as links to other web pages.

3.2.2 Common Tactical Display Management

An ELVIS server shall create a tactical display for presentation in a browser. The server shall support multiple, simultaneous user accesses with a queuing architecture that provides "first come, first serve" support. The server shall support 1000 user accounts.

Each user request shall be serviced independently from other requests to create a tailored tactical display. The system shall provide the capability for the operator to select and render geographic areas, as well as selected raster image maps, as a background for the display of tracks and overlays.

The system shall provide track plotting capabilities to display the current position of each track in the track database.

These subsections describe the display management, track plotting, and briefing tools that the system provides:

- Cartography and Mapping (3.2.2.1)
  - Map Options
  - Stored Maps
  - Map Database
- Common Tactical Picture (3.2.2.2)
  - Track Symbols
  - Track Symbol Labels
  - Track Type Toggles
  - Cat/Threat Matrix
  - Declutter
  - Amplify Tracks
- Overlays (3.2.2.3)

3.2.2.1 Cartography and Mapping

These subsections describe cartography and mapping options:

- Map Options (3.2.2.1.1)
- Stored Maps (3.2.2.1.2)
- Map Database (3.2.2.1.3)

3.2.2.1.1   Map Options

The system shall allow multiple users to simultaneously access independent tactical displays without any disruption to the host (i.e., the host continues to behave as a normal JMCIS workstation except for some performance degradation due to the additional CPU and I/O loading incurred by ELVIS processes).

The system shall provide the operator with the capability to display maps in the following formats: Arc Digitized Raster Graphics (ADRG), Compressed Aeronautical Chart (CAC), Digital Chart of the World (DCW), Digital Nautical Chart (DNC) maps, Digital Terrain Elevation Data (DTED), Meteorological Image Format (MIF), World Database II (WDBII), and World Vector Shoreline (WVS).

The system shall provide the following map options:

- Zoom Map: Frame a geographic area, located on the currently displayed map, to become the new map display. During the framing process, the user shall be able to specify opposite corners of the zoom box.

- Double Width: Double the radius of the current display, maintaining the same center lat/lng.

- Half Width: Half the radius of the current display, maintaining the same center lat/lng.

- Whole World: Expand the current view to show the whole world.

- Center On: Recenter the map on a selected track, pointer location, or the ownship position while maintaining the current radius. If no radius is available, then a default radius of 50nm shall be used.

- Refresh Map: Redraw chart and windows currently displayed.

- Previous Chart: Redisplay the chart shown just prior to the current map. The user shall have this capability if the browser cache is configured properly.

- Store Maps: Allow the operator to save, recall, and delete charts.

- Map List: Display a list of maps stored in the system.

- Colors: Adjust the colors of the land masses and bodies of water on map currently displayed and permit the display of filled or outlined maps.

- Intensity: Brighten or darken the map currently displayed.

3.2.2.1.2   Stored Maps

The system shall manage a database of up to 100 private maps for each operator and 100 public maps for the site (as defined by the system administrator). The system shall allow operators to save, recall, and delete stored maps in their private inventory as well as recall stored maps in the public inventory. Stored maps shall retain all plotting features, including map product, track plot controls, and active overlays.

3.2.2.1.3   Map Database

The system shall access a database of maps that are available with Unified Build. Each of these maps shows a specific area of the world in a specific map format.

The system shall allow an operator to display a map coverage view of the maps in the system. A map coverage view draws boxes on the tactical display to mark the areas where maps exist.

The system shall allow operators to load one of these maps onto the tactical display.

The system shall allow an operator to print a list of maps in the database.

3.2.2.2 Common Tactical Picture

The system shall provide a tactical track picture to show the last reported position of each track in the database that is active (for plotting purposes) at the time the map snapshot was taken (i.e., converted into a GIF). The system shall display cse/spd leaders by default. The system shall declutter track labels by default.

All tracks in the system shall be assigned default color coding according to type:

- Friendly tracks shall be cyan (light blue).

- Hostile tracks shall be red.

- Unknown tracks shall be yellow.

- Ambiguous tracks shall be purple.

- Neutral tracks shall be green.

- Selected tracks shall be white.

Text and symbol sizes of tiny, small, medium, large, and huge shall be available for plotting.

These subsections describe track plotting:

- Track Symbols (3.2.2.2.1)

- Track Symbol Labels (3.2.2.2.2)

- Track Type Toggles (3.2.2.2.3)

- Cat/Threat Matrix (3.2.2.2.4)

- Amplify Tracks (3.2.2.2.5)

3.2.2.2.1   Track Symbols

Unless otherwise specified, non-Unit tracks shall be plotted with standard NTDS symbols (as defined in the *OTH-T GOLD Specification*).

The system shall use standard Joint symbology to show Units. The Unit symbology is determined from a composite of Organizational Type and Echelon.

3.2.2.2.2   Track Symbol Labels

The operator shall have the capability to specify the label associated with a track's symbol on the tactical display. The operator shall be allowed to specify this label for all tracks globally. The settings shall include:

- Short name

- Short name with timelate

- Short name with position

- Long name

- Ship class

- Flag

- Type

- Source

- Sensor

The default symbol annotation shall use the track short name field for non-Link tracks, NTDS track number for Link tracks, and Identification Friend or Foe Mode 2 (IFF-2) Nickname for Link tracks with IFF-2 specified and within the table values of an IFF-2 Nickname table (as held by Unified Build).

The system shall allow specification of the number of characters (up to 30) for the selected symbol annotation.

3.2.2.2.3   Track Type Toggles

The system shall allow groups of tracks to be activated or deactivated by their real/exercise status (real-world, live training, simulated). Active tracks shall appear on the tactical display while inactive tracks shall not appear.

3.2.2.2.4   Cat/Threat Matrix

The system shall provide a standardized matrix selection by threat and category for controlling the plotting of tracks. The matrix shall contain threats of friendly, assumed friendly, hostile, assumed enemy, neutral, unevaluated, pending, and unknown. The matrix shall contain categories of naval, merchant, submarine, aircraft, land, and unknown.

The system shall allow separate on/off plotting for cat/threat matrix tracks and Unit tracks.

3.2.2.2.5   Amplify Tracks

The system shall support a method to quickly display important data about a specific track. The data displayed shall be a limited set of data on the track, including the most important information identifying the track and its position.

3.2.2.3 Overlays

The system shall provide display of geographic overlays. The system shall allow the operator to select up to 50 overlays for display. Each overlay shall be capable of having up to 100 objects and 256 total points.

The operator shall be able to save a specific map view with the overlay.

The system shall provide the capability to plot a maneuvering board, based on user-specified lat/lng center, number of range rings, and distance between range rings.

3.2.3 Tactical Database Management

The system shall be able to display the JMCIS database consisting of up to 5212 real-world, simulated, and live-training tracks. All functionality of the system shall exist for real-world, simulated and live-training tracks.

3.2.3.1 Track Database Management

These subsections describe the system's track management requirements:

- Track Scope or Availability Level (3.2.3.1.1)
- Track Selection (3.2.3.1.2)
- Track Search (3.2.3.1.3)
  - Geographic Track Search
  - Attribute Track Search

3.2.3.1.1   Track Scope or Availability Level

The system shall support the display of tracks that are shared between WAN activities (i.e., Platform or Unit tracks), local to an activity's LAN, or restricted to the ELVIS server.

3.2.3.1.2   Track Selection

The system shall allow an operator to select a track by clicking directly on the track or its label on the tactical display. The system shall display attribute and status information (including remarks) on a selected track. The system shall display history data on the selected track. The system shall allow an operator to center on a selected track on the tactical display.

3.2.3.1.3   Track Search

A track search feature shall be provided to permit selective scans of the track database for candidate tracks matching the search criteria. Tracks which are found during a search shall be presented in a list with hyperlinks to amplifying data on each track.

These subsections describe the track search requirements:

- Geographic Track Search (3.2.3.1.3.1)
- Attribute Track Search (3.2.3.1.3.2)

3.2.3.1.3.1 Geographic Track Search

The operator shall be allowed to retrieve a list of tracks currently plotted on the tactical display. Performance considerations shall be accommodated to ensure a single user cannot degrade overall system performance. For example, functional compromises will be considered for maps with a large number of plotted tracks (e.g., over 250 tracks).

3.2.3.1.3.2 Attribute Track Search

The system shall permit selective track database searches through attributes (such as track name, flag, class, and type). The operator shall be allowed to enter known values for various attributes to find a group of tracks which have these particular attributes. Individual entries shall include wildcard ("*") searches.

3.2.4 C^{4}I Applications

The system shall provide the ability to create, modify, and display a variety of data sets, some of which are provided as fixed data sets and some of which are produced as products of decision aids. The

system shall perform a collection of decision aid and support functions using the current track and non-track database elements for reference.

These subsections describe the support TDA and application requirements:

- Maneuvering Board (3.2.4.1)

- Range and Bearing Calculation (3.2.4.2)

- Briefs (3.2.4.3)

3.2.4.1 Maneuvering Board

The system shall permit the display of a maneuvering board that consists of a group of range rings and bearing lines.

The system shall allow an operator to place the maneuvering board at any chosen lat/lng point. An operator shall be permitted to display from 1 to 10 rings, with the rings set at an operator-specified distance from each other.

3.2.4.2 Range and Bearing Calculation

The system shall permit the calculation of the range/bearing relative to a pair of selected positions. A great circle line connecting the selected points shall be displayed.

3.2.4.3 Briefs

The system shall provide the capability to view briefs resident on the ELVIS host. The system shall allow the operator to navigate forward or backwards through the brief package.

3.2.5 System Support Functions

These subsections describe the requirements for the system support functions:

- Presentation Management (3.2.5.1)
  - Window System
  - Font Configuration
  - Printing
  - Log-off
- Online Help (3.2.5.2)
- System Logs and Diagnostics (3.2.5.3)
  - System Status Monitoring
  - System Comment Log
  - User and Error Logs

3.2.5.1 Presentation Management

These subsections describe the requirements for presentation management. Many of these features will be native to the browser.

- Window System (3.2.5.1.1)
- Font Configuration (3.2.5.1.2)
- Printing (3.2.5.1.3)
- Log-off (3.2.5.1.4)

3.2.5.1.1 Window System

The window system shall provide a human-computer interface (HCI) consistent with the functionality provided by web browsers and the HTML specification. The window system shall allow the use of the following graphical objects:

- windows
- clickable images
- option buttons
- radio buttons
- checkboxes
- edit text fields
- scrolling lists
- pull-down menus

When an item is selected from the list, it shall be highlighted in the list.

The system shall also allow the operator to manipulate windows, consistent with the functionality provided by window managers. It shall handle these functions:

- move window
- close window
- iconify window
- raise or activate a window
- resize window

3.2.5.1.2 Font Configuration

The system shall provide configurable font size for text displayed within windows, consistent with the functionality provided by web browsers. It shall provide an operator with a list of available font choices and allow the operator to choose a font from the list.

3.2.5.1.3 Printing

Each workstation shall have selective access to printers on the LAN, consistent with the functionality provided by web browsers and the inventory of printers available to UB.

The classification shall be displayed on the top and bottom of all printouts.

3.2.5.1.4 Log-off

The system shall provide the capability to exit from the system.

3.2.5.2 Online Help

The system shall provide the operator with online access to current help information, consistent with the *ELVIS User Manual*. ELVIS shall provide a table of contents for the online help so that the operator can quickly reach required information.

3.2.5.3 System Logs and Diagnostics

3.2.5.3.1 System Status Monitoring

The system shall provide a diagnostic aid which allows the system administrator to view the core ELVIS processes. Information which shall be provided includes the system name, load averages, processes (active, waiting, or starting), CPU states, and memory usage. The system shall allow the system administrator to view the file system statistics.

3.2.5.3.2 System Comment Log

The system shall allow an operator to enter comments and trouble reports for review by the system administrator.

3.2.5.3.3 User and Error Logs

The system shall provide diagnostic aids to help monitor system usage and troubleshoot server problems. These shall allow the system administrator to view the logs produced by the web server.

3.2.6 Security Management

The system shall provide security features that shall be accessible to the system administrator. These security features shall include items that will not be accessible to general users.

The system shall provide system security functions for the following areas:

- It shall provide individual user logins with distinct secure passwords and allow restricted system access for selected users.
- It shall provide audit features.

These subsections describe the requirements for security management:

- Logins and Passwords (3.2.6.1)
- Classification (3.2.6.2)
- Audit Features (3.2.6.3)

3.2.6.1 Logins and Passwords

The system shall allow individual users to be assigned their own login name and password. As a password is typed at the keyboard, it shall not appear on the screen.

The system shall allow system access to be restricted for any selected users, based on access control list (ACL) files in each directory of interest.

3.2.6.2 Classification

The system shall allow the classification to be derived from the classification of the workstation on which the ELVIS server software resides. This classification level shall be displayed at the top and bottom of the browser window. The system shall print the correct classification above and below a hard copy in accordance with standard classification procedures.

3.2.6.3 Audit Features

The system shall automatically create audit logs.

The system shall create an error audit log which lists events that have occurred within the security manager function of the system. These events shall include unsuccessful access attempts and the IP address of the remote host. The Security Manager shall have the ability to print a list of this data, archive the data, and purge the data.

3.2.7 Administration Features

The system shall provide a group of functions that shall be accessible to a System Administrator. These functions shall include activities that need not be accessible to general users.

3.2.7.1 Install Segments

The system shall be able to be installed as segment(s), in compliance with the JMCIS COE specification.

3.3   External Interface Requirements

External interfaces shall consist of TCP/IP connections between the web browser and web server.

3.4 Internal Interface Requirements

The system software design shall require a collection of concurrently executing processes with interprocess communications and protocols for responding to browser requests. The processes are as follows:

- Web server process

- CGI programs

- Supervisor programs

- System Administration programs

- Database management programs

- Plot Tracks program

- Mapping program

- Ancillary support services

3.5 System Data Requirements

Data requirements for the operational system have been defined in the preceding paragraphs.

3.6 Adaptation Requirements

3.6.1 Operational Parameters

Hardware Configuration Items (HWCIs) are described in each build's Version Description Document (VDD). These HWCIs must satisfy the storage capacity, communication capabilities, computing environment, computing power, and advanced display capabilities identified elsewhere in this document. In general, the transportable system will be complemented by the use of numerous HWCIs, some already existing in the government inventory, others just emerging from the private sector's protected arena. It is anticipated that graphics specification will emerge as the system develops. The graphics standards are, therefore, not specified here.

3.6.2 System Capacities

The storage and workload capacities of the system shall be flexible so that they can be easily redefined according to operational needs supported by appropriate changes in the computational devices constituting the HWCI.

3.6.3 Processing Speed

The upper-limit of the processing speed shall be determined by the currently supported HWCIs. Due to the large number of high baud rate interfaces and the potential for conflict absent prioritization of operations, prioritization shall be executed so as to optimize the efficiency of interface communications.

3.7 Safety Requirements

ELVIS shall conform to the safety criteria paragraph of MIL-E-16400G.

3.8 Security and Privacy Requirements

ELVIS shall be designed to operate at the General Service (GENSER) Secret or a lower level of security, but it can operate at the Top Secret level in controlled spaces. The current security level of ELVIS shall always be displayed in each browser, as set by the Security Manager.

An operator of ELVIS shall be allowed to secure the system displays and protect the system against unauthorized viewing by exiting from the browser, consistent with the capabilities of the workstation.

3.9 CSCI Environment Requirements

ELVIS shall be designed to operate in the same functional environment as Unified Build.

3.10 Computer Resource Requirements

This section specifies the applicable requirements pertaining to the system computer resource requirements.

3.10.1 Computer Hardware Requirements

ELVIS shall be designed to require the same hardware as Unified Build.

3.10.2 Computer Hardware Utilization Requirements

ELVIS shall be designed to satisfy the same hardware resource utilization requirements as Unified Build.

3.11 Software Quality Factors

This section specifies the applicable requirements pertaining to the system software quality factors.

3.11.1 Reliability

A properly configured ELVIS software package shall have a mean time between critical failures of not less than 200 hours under high system processing loads. CSCI Mean Time Between Failures (MTBF) is independent of HWCI MTBF.

3.11.2 Maintainability

ELVIS software shall have a Mean Time To Repair (MTTR) via tape reload of not more than 1 hour per CPU. Cold restart of the system shall occur in less than 20 minutes. A warm restart shall occur in less than 10 minutes. CSCI MTTR is independent of HWCI MTTR.

3.11.3 Availability

ELVIS shall comply with software availability requirements as specified by SPAWAR for JMCIS end systems.

3.12 Design and Implementation Constraints

The system software shall be designed to comply with requirements for the run-time environment as specified in the *JMCIS Common Operating Environment (COE)*.

3.13 Personnel-Related Requirements

The system requires no additional manning beyond that required to support proper database management, communications processing, and battle management planning for Unified Build. The system shall adhere to the standards for Human Performance and Human Engineering identified in *MIL-STD-1472*, Sections 5.1, 5.2, and 5.15, as applicable to the web browser interface and limitations of the HTML specification. The system shall be supported by training programs and documentation.

3.14 Training-Related Requirements

The training requirements shall be minimal, consisting of training for normal browser operation and proper operation of ELVIS.

3.15 Logistics-Related Requirements

The logistics requirements shall be consistent with the same requirements for Unified Build.

3.16 Other Requirements

The operation of ELVIS shall require a browser, TCP/IP connectivity to the ELVIS server, and a valid user account on the ELVIS server.

3.17 Packaging Requirements

The ELVIS software shall be delivered in executable form on standard magnetic media appropriate for the supported HWCIs. Classified portions of the code, if any, shall be shipped separately, wrapped,

and marked in accordance with the Industrial Security Manual. All computer-generated code shall be subject to DD250 signature receipt. The tapes shall be labeled, specifying the version and date of acceptance of the ELVIS release.

3.18 Precedence and Criticality of Requirements

The precedence and criticality of requirements shall be consistent with the same weights assigned to Unified Build.

Notes

4.0 Qualification Provisions

This section specifies the qualification methods and any special qualification requirements necessary to establish that the system satisfies the requirements of Sections 3 and 5 of this SRS.

The system must satisfy the following qualification requirements:

- CSCI Testing
- System Integration and Testing
    - Integration Testing
    - Certification Testing
- Final Certification Testing
    - Exercise testing on-shore and afloat
    - Predeployment operation testing
    - Interoperability testing in deployment
- Operation Evaluation (OPEVAL)

4.1 Qualification Methods

The qualification test methods planned for use with ELVIS are described in the following paragraphs.

4.1.1 Inspection

Inspection involves visual examination of the system software components, code, and documentation to verify that requirements are satisfied.

4.1.2 Demonstration

Demonstration involves performing specific system operations and visually verifying that a requirement is satisfied, without the use of elaborate instrumentation or special test equipment. Software test drivers or harnesses may be used for demonstration-type tests.

4.1.3 Test

Test involves the use of special instrumentation or test equipment to measure system outputs and validate they meet the specification. For example, a light meter might be used to measure the lumens emitted from a Cathode Ray Tube. This type of qualification testing will rarely, if ever, be used on the ELVIS software.

4.1.4 Analysis

Analysis involves accumulating data via specified methods, which may include the use of software test drivers or instrumentation, and analyzing that data. Analysis methods and tools may include manual inspection, hand calculations, or the use of data reduction tools. In every case the analysis methods and acceptable results must be carefully specified in the test procedures.

4.2 Qualification Methods

The qualification methods for ELVIS shall be consistent with the same methods appropriate for Unified Build.

5.0 Requirements Matrix

This matrix associates each requirement in Sections 3 and 4 with the proposed method of qualification.

SRS PARA
   SRS paragraph number

RQMT ID
   Unique number assigned to the requirement.

QUAL MTHD
   Qualification method:

   I   Inspection

   D   Demonstration

   T   Test

   A   Analysis

Qualification methods are described in Section 4.

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall interface to a web server using the standard Common Gateway Interface (CGI) specification.	3.2.1.1	1	D
The system shall be available to users with valid accounts and appropriate access permissions, as maintained in the access control list (ACL) file for each directory.	3.2.1.1	2	D
The web server's port number shall be automatically assigned during installation.	3.2.1.1	3	D
The system administrator shall be able to change the port number by modifying a configuration file.	3.2.1.1	4	D
A default incoming message log with a maximum of 1000 messages (consistent with UB's inventory) shall be available.	3.2.1.2.1	5	D
The incoming message log shall be viewable in a summary window that includes identification information for each message.	3.2.1.2.1	6	D
The operator shall have the ability to the sort the message list according to any column in the summary window.	3.2.1.2.1	7	D
The operator shall have the ability to view any message that has not been deleted.	3.2.1.2.1	8	D
The operator shall also be able to print a copy of the raw message.	3.2.1.2.1	9	D
A default outgoing message log with a maximum of 1000 messages (consistent with UB's inventory) shall be available.	3.2.1.2.2	10	D
The outgoing message log shall be viewable in a summary window that includes identification information for each message.	3.2.1.2.2	11	D
The operator shall have the ability to the sort the message list according to any column in the summary window.	3.2.1.2.2	12	D
The operator shall have the ability to view any message that has not been deleted.	3.2.1.2.2	13	D
The operator shall also be able to print a copy of the raw message.	3.2.1.2.2	14	D
The system shall allow the system administrator to add URLs as links to other web pages.	3.2.1.3	15	D
An ELVIS server shall create a tactical display for presentation in a browser.	3.2.2	16	D
The server shall support multiple, simultaneous user accesses with a queuing architecture that provides "first come, first serve" support.	3.2.2	17	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The server shall support 1000 user accounts.	3.2.2	18	D
Each user request shall be serviced independently from other requests to create a tailored tactical display.	3.2.2	19	D
The system shall provide the capability for the operator to select and render geographic areas, as well as selected raster image maps, as a background for the display of tracks and overlays.	3.2.2	20	D
The system shall provide track plotting capabilities to display the current position of each track in the track database.	3.2.2	21	D
The system shall allow multiple users to simultaneously access independent tactical displays without any disruption to the host.	3.2.2.1.1	22	D
The system shall provide the operator with the capability to display maps in Arc Digitized Raster Graphics (ADRG) format.	3.2.2.1.1	23	D
The system shall provide the operator with the capability to display maps in Compressed Aeronautical Chart (CAC) format,	3.2.2.1.1	24	D
The system shall provide the operator with the capability to display maps in Digital Chart of the World (DCW) format,	3.2.2.1.1	25	D
The system shall provide the operator with the capability to display Digital Nautical Chart (DNC) maps,	3.2.2.1.1	26	D
The system shall provide the operator with the capability to display maps in Digital Terrain Elevation Data (DTED) format,	3.2.2.1.1	27	D
The system shall provide the operator with the capability to display maps in Meteorological Image Format (MIF),	3.2.2.1.1	28	D
The system shall provide the operator with the capability to display maps in World Database II (WDBII) format,	3.2.2.1.1	29	D
The system shall provide the operator with the capability to display maps in World Vector Shoreline (WVS) format,	3.2.2.1.1	30	D
The system shall provide the ability to frame a geographic area located on the currently displayed map to become the new map display.	3.2.2.1.1	31	D
The system shall provide the ability to specify opposite corners of the zoom box.	3.2.2.1.1	32	D
The system shall provide the ability to double the radius of the current display, maintaining the same center lat/lng,	3.2.2.1.1	33	D
The system shall provide the ability to half the radius of the current display, maintaining the same center lat/lng.	3.2.2.1.1	34	D
The system shall provide the ability to expand the current view to show the whole world.	3.2.2.1.1	35	D
The system shall provide the ability to recenter the map on a selected track while maintaining the current radius.	3.2.2.1.1	36	D
The system shall provide the ability to recenter the map on a pointer location while maintaining the current radius.	3.2.2.1.1	37	D
The system shall provide the ability to recenter the map on the ownship position while maintaining the current radius.	3.2.2.1.1	38	D
If no radius is available, then a default radius of 50nm shall be used to center on a selected track, pointer location, or ownship position.	3.2.2.1.1	39	D
The system shall provide the ability to redraw chart and windows currently displayed.	3.2.2.1.1	40	D
The system shall provide the ability to redisplay the chart shown just prior to the current map if the browser cache is configured properly.	3.2.2.1.1	41	D
The system shall provide the ability to save charts.	3.2.2.1.1	42	D
The system shall provide the ability to recall charts.	3.2.2.1.1	43	D
The system shall provide the ability to delete charts.	3.2.2.1.1	44	D
The system shall provide the ability to display a list of maps stored in the system.	3.2.2.1.1	45	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall provide the ability to adjust the colors of the land masses on the map currently displayed.	3.2.2.1.1	46	D
The system shall provide the ability to adjust the colors of the bodies of water on the map currently displayed.	3.2.2.1.1	47	D
The system shall provide the ability to display filled or outlined maps.	3.2.2.1.1	48	D
The system shall provide the ability to brighten or darken the map currently displayed.	3.2.2.1.1	49	D
The system shall manage a database of up to 100 private maps for each operator.	3.2.2.1.2	50	D
The system shall manage a database of up to 100 public maps for the site.	3.2.2.1.2	51	D
The system shall allow operators to save stored maps in their private inventory	3.2.2.1.2	52	D
The system shall allow operators to recall stored maps in their private inventory	3.2.2.1.2	53	D
The system shall allow operators to delete stored maps in their private inventory	3.2.2.1.2	54	D
The system shall allow operators to recall stored maps in the public inventory	3.2.2.1.2	55	D
Stored maps shall retain all plotting features, including map product, track plot controls, and active overlays.	3.2.2.1.2	56	D
The system shall access a database of maps that are available with Unified Build.	3.2.2.1.3	57	D
The system shall allow an operator to display a map coverage view of the maps in the system.	3.2.2.1.3	58	D
The system shall allow operators to load one of the maps from the map coverage view of the maps in the system onto the tactical display.	3.2.2.1.3	59	D
The system shall allow an operator to print a list of maps in the database.	3.2.2.1.3	60	D
The system shall provide a tactical track picture to show the last reported position of each track in the database that is active (for plotting purposes) at the time the map snapshot was taken.	3.2.2.2	61	D
The system shall display cse/spd leaders by default.	3.2.2.2	62	D
The system shall declutter track labels by default.	3.2.2.2	63	D
All tracks in the system shall be assigned default color coding according to type.	3.2.2.2	64	D
Friendly tracks shall be cyan (light blue).	3.2.2.2	65	D
Hostile tracks shall be red.	3.2.2.21	66	D
Unknown tracks shall be yellow.	3.2.2.2	67	D
Ambiguous tracks shall be purple.	3.2.2.2	68	D
Neutral tracks shall be green.	3.2.2.2	69	D
Selected tracks shall be white.	3.2.2.2	70	D
Text sizes of tiny, small, medium, large, and huge shall be available for plotting.	3.2.2.2	71	D
Symbol sizes of tiny, small, medium, large, and huge shall be available for plotting.	3.2.2.2	72	D
Unless otherwise specified, non-Unit tracks shall be plotted with standard NTDS symbols (as defined in the *OTH-T GOLD Specification*).	3.2.2.2.1	73	D
The system shall use standard Joint symbology to show Units.	3.2.2.2.1	74	D
The operator shall have the capability to specify the label associated with a track's symbol on the tactical display.	3.2.2.2.2	75	D
The operator shall be allowed to specify this label for all tracks globally.	3.2.2.2.2	76	D
The settings for the label associated with a track's symbol shall include Short name.	3.2.2.2.2	77	D
The settings for the label associated with a track's symbol shall include Short name with timelate.	3.2.2.2.2	78	D
The settings for the label associated with a track's symbol shall include Short name with position.	3.2.2.2.2	79	D
The settings for the label associated with a track's symbol shall include Long name.	3.2.2.2.2	80	D
The settings for the label associated with a track's symbol shall include Ship class.	3.2.2.2.2	81	D
The settings for the label associated with a track's symbol shall include Flag.	3.2.2.2.2	82	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The settings for the label associated with a track's symbol shall include Type.	3.2.2.2.2	83	D
The settings for the label associated with a track's symbol shall include Source.	3.2.2.2.2	84	D
The settings for the label associated with a track's symbol shall include Sensor.	3.2.2.2.2	85	D
The default symbol annotation shall use the track short name field for non-Link tracks.	3.2.2.2.2	86	D
The default symbol annotation shall use the NTDS track number for Link track.	3.2.2.2.2	87	D
The default symbol annotation shall use the Identification Friend or Foe Mode 2 (IFF-2) Nickname for Link tracks with IFF-2 specified and within the table values of an IFF-2 Nickname table (as held by Unified Build).	3.2.2.2.2	88	D
The system shall allow specification of the number of characters (up to 30) for the selected symbol annotation.	3.2.2.2.2	89	D
The system shall allow groups of tracks to be activated by their real/exercise status (real-world, live training, simulated).	3.2.2.2.3	90	D
The system shall allow groups of tracks to be deactivated by their real/exercise status (real-world, live training, simulated).	3.2.2.2.3	91	D
Active tracks shall appear on the tactical display.	3.2.2.2.3	92	D
Inactive tracks shall not appear on the tactical display.	3.2.2.2.3	93	D
The system shall provide a standardized matrix selection by threat and category for controlling the plotting of tracks.	3.2.2.2.4	94	D
The matrix shall contain threats of friendly, assumed friendly, hostile, assumed enemy, neutral, unevaluated, pending, and unknown.	3.2.2.2.4	95	D
The matrix shall contain categories of naval, merchant, submarine, aircraft, land, and unknown.	3.2.2.2.4	96	D
The system shall allow separate on/off plotting for cat/threat matrix tracks.	3.2.2.2.4	97	D
The system shall allow separate on/off plotting for Unit tracks.	3.2.2.2.4	98	D
The system shall support a method to quickly display important data about a specific track.	3.2.2.2.5	99	D
The data displayed shall be a limited set of data on the track, including the most important information identifying the track and its position.	3.2.2.2.5	100	D
The system shall provide display of geographic overlays.	3.2.2.3	101	D
The system shall allow the operator to select up to 50 overlays for display.	3.2.2.3	102	D
Each overlay shall be capable of having up to 100 objects.	3.2.2.3	103	D
Each overlay shall be capable of having up to 256 total points.	3.2.2.3	104	D
The operator shall be able to save a specific map view with the overlay.	3.2.2.3	105	D
The system shall provide the capability to plot a maneuvering board, based on user-specified lat/lng center, number of range rings, and distance between range rings.	3.2.2.3	106	D
The system shall be able to display the JMCIS database consisting of up to 5212 real-world, simulated, and live-training tracks.	3.2.3	107	D
All functionality of the system shall exist for real-world tracks.	3.2.3	108	D
All functionality of the system shall exist for simulated tracks.	3.2.3	109	D
All functionality of the system shall exist for live-training tracks.	3.2.3	110	D
The system shall support the display of tracks that are shared between WAN activities	3.2.3.1.1	111	D
The system shall support the display of tracks that are local to an activity's LAN.	3.2.3.1.1	112	D
The system shall support the display of tracks that are restricted to the ELVIS server.	3.2.3.1.1	113	D
The system shall allow an operator to select a track by clicking directly on the track on the tactical display..	3.2.3.1.2	114	D
The system shall allow an operator to select a track by clicking directly on its label on the tactical display.	3.2.3.1.2	115	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall display attribute on a selected track.	3.2.3.1.2	116	D
The system shall display status information (including remarks) on a selected track.	3.2.3.1.2	117	D
The system shall display history data on the selected track.	3.2.3.1.2	118	D
The system shall allow an operator to center on a selected track on the tactical display.	3.2.3.1.2	119	D
A track search feature shall be provided to permit selective scans of the track database for candidate tracks matching the search criteria.	3.2.3.1.3	120	D
Tracks which are found during a search shall be presented in a list with hyperlinks to amplifying data on each track.	3.2.3.1.3	121	D
The operator shall be allowed to retrieve a list of tracks currently plotted on the tactical display.	3.2.3.1.3.1	122	D
Performance considerations shall be accommodated to ensure a single user cannot degrade overall system performance.	3.2.3.1.3.1	123	D
The system shall permit selective track database searches through attributes.	3.2.3.1.3.2	124	D
The operator shall be allowed to enter known values for various attributes to find a group of tracks which have these particular attributes.	3.2.3.1.3.2	125	D
Individual entries shall include wildcard ("*") searches.	3.2.3.1.3.2	126	D
The system shall provide the ability to create, modify, and display a variety of data sets.	3.2.4	127	D
The system shall perform a collection of decision aid and support functions using the current track and non-track database elements for reference.	3.2.4	128	D
The system shall permit the display of a maneuvering board that consists of a group of range rings and bearing lines.	3.2.4.1	129	D
The system shall allow an operator to place the maneuvering board at any chosen lat/lng point.	3.2.4.1	130	D
An operator shall be permitted to display from 1 to 10 rings for a maneuvering board.	3.2.4.1	131	D
An operator shall be permitted to specify the distance between the rings of a maneuvering board.	3.2.4.1	132	D
The system shall permit the calculation of the range/bearing relative to a pair of selected positions.	3.2.4.2	133	D
A great circle line connecting the selected points shall be displayed.	3.2.4.2	134	D
The system shall provide the capability to view briefs resident on the ELVIS host.	3.2.4.3	135	D
The system shall allow the operator to navigate forward or backwards through the brief package.	3.2.4.3	136	D
The window system shall provide a human-computer interface (HCI) consistent with the functionality provided by web browsers and the HTML specification.	3.2.5.1.1	137	D
The window system shall allow the use of windows.	3.2.5.1.1	138	D
The window system shall allow the use of clickable images.	3.2.5.1.1	139	D
The window system shall allow the use of option buttons.	3.2.5.1.1	140	D
The window system shall allow the use of radio buttons.	3.2.5.1.1	141	D
The window system shall allow the use of checkboxes.	3.2.5.1.1	142	D
The window system shall allow the use of edit text fields.	3.2.5.1.1	143	D
The window system shall allow the use of scrolling lists.	3.2.5.1.1	144	D
The window system shall allow the use of pull-down menus.	3.2.5.1.1.	145	D
When an item is selected from the list, it shall be highlighted in the list.	3.2.5.1.1	146	D
The system shall also allow the operator to manipulate windows, consistent with the functionality provided by window managers.	3.2.5.1.1	147	D
The system shall handle the function: move window.	3.2.5.1.1	148	D
The system shall handle the function: close window.	3.2.5.1.1	149	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall handle the function: iconify window.	3.2.5.1.1	150	D
The system shall handle the function: raise a window.	3.2.5.1.1	151	D
The system shall handle the function: activate a window.	3.2.5.1.1	152	D
The system shall handle the function: resize window.	3.2.5.1.1	153	D
The system shall provide configurable font size for text displayed within windows, consistent with the functionality provided by web browsers.	3.2.5.1.2	154	D
The system shall provide an operator with a list of available font choices.	3.2.5.1.2	155	D
The system shall allow the operator to choose a font from the list.	3.2.5.1.2	156	D
Each workstation shall have selective access to printers on the LAN, consistent with the functionality provided by web browsers.	3.2.5.1.3	157	D
Each workstation shall have selective access to printers on the LAN, consistent with the inventory of printers available to UB.	3.2.5.1.3	158	D
The classification shall be displayed on the top and bottom of all printouts.	3.2.5.1.3	159	D
The system shall provide the capability to exit from the system.	3.2.5.1.4	160	D
The system shall provide the operator with online access to current help information, consistent with the *ELVIS User Manual*.	3.2.5.2	161	D
ELVIS shall provide a table of contents for the online help.	3.2.5.2	162	D
The system shall provide a diagnostic aid which allows the system administrator to view the core ELVIS processes.	3.2.5.3.1	163	D
Information which shall be provided includes the system name.	3.2.5.3.1	164	D
Information which shall be provided includes the load average.	3.2.5.3.1	165	D
Information which shall be provided includes the processes (active, waiting, or starting).	3.2.5.3.1	166	D
Information which shall be provided includes the CPU states.	3.2.5.3.1	167	D
Information which shall be provided includes the memory usage.	3.2.5.3.1	168	D
The system shall allow the system administrator to view the file system statistics	3.2.5.3.1	169	D
The system shall allow an operator to enter comments and trouble reports.	3.2.5.3.2	170	D
The system shall provide diagnostic aids to help monitor system usage.	3.2.5.3.3	171	D
The system shall provide diagnostic aids to help troubleshoot server problems.	3.2.5.3.3	172	D
These shall allow the system administrator to view the logs produced by the web server.	3.2.5.3.3	173	D
The system shall provide security features that shall be accessible to the system administrator.	3.2.6	174	D
These security features shall include items that will not be accessible to general users.	3.2.6	175	D
The system shall provide individual user logins with distinct secure passwords.	3.2.6	176	D
The system shall allow restricted system access for selected users.	3.2.6	177	D
The system shall provide audit features.	3.2.6	178	D
The system shall allow individual users to be assigned their own login name and password.	3.2.6.1	179	D
As a password is typed at the keyboard, it shall not appear on the screen.	3.2.6.1	180	D
The system shall allow system access to be restricted for any selected users, based on access control list (ACL) files in each directory of interest.	3.2.6.1	181	D
The system shall allow the classification to be derived from the classification of the workstation on which the ELVIS server software resides.	3.2.6.2	182	D
This classification level shall be displayed at the top and bottom of the browser window.	3.2.6.2	183	D
The system shall print the correct classification above and below a hard copy in accordance with standard classification procedures.	3.2.6.2	184	D
The system shall automatically create audit logs.	3.2.6.3	185	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall create an error audit log which lists events that have occurred within the security manager function of the system.	3.2.6.3	186	D
These events shall include unsuccessful access attempts and the IP address of the remote host.	3.2.6.3	187	D
The Security Manager shall have the ability to print a list of this data, archive the data, and purge the data.	3.2.6.3	188	D
The system shall provide a group of functions that shall be accessible to a System Administrator.	3.2.7	189	D
These functions shall include activities that need not be accessible to general users.	3.2.7	190	D
The system shall be able to be installed as segment(s), in compliance with the JMCIS COE specification.	3.2.7.1	191	D
External interfaces shall consist of TCP/IP connections between the web browser and web server.	3.3	192	D
The system software design shall require a collection of concurrently executing processes with interprocess communications and protocols for responding to browser requests.	3.4	193	D
The storage capacity of the system shall be flexible so that they can be easily redefined according to operational needs supported by appropriate changes in the computational devices constituting the HWCI.	3.6.2	194	D
The workload capacity of the system shall be flexible so that they can be easily redefined according to operational needs supported by appropriate changes in the computational devices constituting the HWCI.	3.6.2	195	D
The upper-limit of the processing speed shall be determined by the currently supported HWCIs.	3.6.3	196	D
Due to the large number of high baud rate interfaces and the potential for conflict absent prioritization of operations, prioritization shall be executed so as to optimize the efficiency of interface communications.	3.6.3	197	D
ELVIS shall conform to the safety criteria paragraph of MIL-E-16400G.	3.7	198	D
ELVIS shall be designed to operate at the General Service (GENSER) Secret or a lower level of security,	3.8	199	D
The current security level of ELVIS shall always be displayed in each browser.	3.8	200	D
An operator of ELVIS shall be allowed to secure the system displays by exiting from the browser, consistent with the capabilities of the workstation.	3.8	201	D
An operator of ELVIS shall be allowed to protect the system against unauthorized viewing by exiting from the browser, consistent with the capabilities of the workstation.	3.8	202	D
ELVIS shall be designed to operate in the same functional environment as Unified Build.	3.9	203	D
ELVIS shall be designed to require the same hardware as Unified Build.	3.10.1	204	D
ELVIS shall be designed to satisfy the same hardware resource utilization requirements as Unified Build.	3.10.2	205	D
A properly configured ELVIS software package shall have a mean time between critical failures of not less than 200 hours under high system processing loads.	3.11.1	206	D
ELVIS software shall have a Mean Time To Repair (MTTR) via tape reload of not more than 1 hour per CPU.	3.11.2	207	D
Cold restart of the system shall occur in less than 20 minutes.	3.11.2	208	D
A warm restart of the system shall occur in less than 10 minutes.	3.11.2	209	D
ELVIS shall comply with software availability requirements as specified by SPAWAR for JMCIS end systems.	3.11.3	210	D
The system software shall be designed to comply with requirements for the run-time environment as specified in the *JMCIS Common Operating Environment (COE)*.	3.12	211	D

Requirement Description	SRS PARA	RQMT ID	QUAL MTH D
The system shall adhere to the standards for Human Performance and Human Engineering identified in *MIL-STD-1472*, Sections 5.1, 5.2, and 5.15, as applicable to the web browser interface and limitations of the HTML specification.	3.13	212	D
The system shall be supported by training programs and documentation.	3.13	213	D
The training requirements shall be minimal, consisting of training for normal browser operation and proper operation of ELVIS.	3.14	214	D
The logistics requirements shall be consistent with the same requirements for Unified Build.	3.15	215	D
The operation of ELVIS shall require a browser.	3.16	216	D
The operation of ELVIS shall require TCP/IP connectivity to the ELVIS server.	3.16	217	D
The operation of ELVIS shall require a valid user account on the ELVIS server.	3.16	218	D
The ELVIS software shall be delivered in executable form on standard magnetic media appropriate for the supported HWCIs.	3.17	219	D
Classified portions of the code, if any, shall be shipped separately, wrapped, and marked in accordance with the Industrial Security Manual..	3.17	220	D
All computer-generated code shall be subject to DD250 signature receipt.	3.17	221	D
The tapes shall be labeled, specifying the version and date of acceptance of the ELVIS release.	3.17	222	D
The precedence and criticality of requirements shall be consistent with the same weights assigned to Unified Build.	3.18	223	D
The qualification methods for ELVIS shall be consistent with the same methods appropriate for Unified Build.	4.2	224	D

6.0 Notes

6.1 Acronyms and Abbreviations

AAW	Anti-Air Warfare
ACDS	Advanced Combat Direction System
ACDS-CG	Advanced Combat Direction System-Cruiser
ACL	Access Control List
ADNET	Anti-Drug Network
ADRG	Arc Digitized Raster Graphics
API	Application Program Interface
ASCII	American Standard Code for Information Interchange
ASUW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare
ATO	Air Tasking Order
ATOCONF	Air Tasking Order Confirmation
ATOMTF	Air Tasking Order Message Text Format
ATOX	Air Tasking Order Exchange
ATWCS	Advanced Tomahawk Weapons Control System
BRG	Bearing
C4I	Command, Control, Communications, and Computer Intelligence
CAC	Compressed Aeronautical Chart
CAP	Combat Air Patrol
CASREP	Casualty Report
CD	Compact Disc
CDS	Combat Direction System

CGI	Common Gateway Interface
COE	Common Operating Environment
COMMS	Communications
CPA	Closest Point of Approach
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CSC	Computer Software Component
CSCI	Computer Software Configuration Item
CSE	Course
DARPA	Defense Advanced Research Projects Agency
DAT	Digital Audio Tape
DB	Database
DCW	Digital Chart of the World
DDN	Defense Data Network
DNC	Digital Nautical Chart
DOD	Department of Defense
DSNET	Defense Security Network
DTC	Desk Top Computer
DTED	Digital Terrain Elevation Data
DTG	Date-time Group
EIA	Electronic Industry Association
ELINT	Electronic Intelligence
ELNOT	ELINT Notation
ELVIS	Enhanced Linked Virtual Information System
EMAIL	Electronic Mail
EMCON	Emission Control

FDD	Functional Description Document
GENADMIN	General Administration
GENSER	General Service
Geo	Geographic
GEOSIT	Geographical Situation
GLDOPNT	GOLD Opnote
GLDOVLY	GOLD Overlay
GLDRPT	GOLD Report
GMT	Greenwich Mean Time
HCI	Human-Computer Interface
HP	Hewlett-Packard
HTTP	Hyper-Text Transfer Protocol
HWCI	Hardware Configuration Item
IDS	Interface Design Specification
IFF	Identification Friend or Foe
IP	Internet Protocol
IRS	Interface Requirements Specification
JANAP	Joint Army, Navy, Air Force Publication
JINTACCS	Joint Interoperability of Tactical Command and Control Systems
JMCIS	Joint Maritime Command Information System
JOTOVLY	JOTS Overlay
JOTS	Joint Operational Tactical System
JRWG	JMCIS Working Group
JUNITRPT	Unit Report
JVIDS	JOTS Visually Integrated Display System

KTS	Knots
LAN	Local Area Network
LAT/LONG	Latitude and Longitude
LOB	Line of Bearing
MB	Megabyte
MDT	Mean Down Time
MIF	Meteorological Image Format
MIPS	Million Instructions Per Second
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
NATO	North Atlantic Treaty Organization
NAVSEA	Naval Sea Systems Command
NAVSPASUR	Naval Space Surveillance
NIPS	Naval Intelligence Processing System
NM	Nautical Miles
NMCC	National Military Command Center
NOFORN	Not Releasable to Foreign Nationals
NTCS-A	Naval Tactical Command System Afloat
NTDS	Naval Tactical Display System
NTISA	Naval Tactical Interoperability Support Activity
NWSS	Navy WWMCCS Software Standardization
OPEVAL	Operational Evaluation
OPNAV	Chief of Naval Operations
OPNOTE	Operations Note

OPSPEC	Operations Specification
OS-OTG	Operational Specification for Over-the-Horizon Targeting GOLD
OSHA	Occupational Safety and Health Administration
OSS	Operations Support System
OTH-T	Over-The-Horizon Targeting
OVLY	Overlay
PIDS	Prime Item Development Specification
PIF	Personal Identification Feature
PROPIN	Proprietary Information
RAM	Random Access Memory
RCS	Revision Control System, Radar Control Ship, Radar Cross Section
RGB	Red-Green-Blue
RNG	Range
SCI	Sensitive Compartmented Information
SDD	Software Design Document
SDE	Software Development Environment
SI	Special Intelligence
SLIP	Serial Line Internet Protocol
SOE	Standard Operating Environment
SPAWAR	Space and Naval Warfare Systems Command
SQL	Structured Query Language
SRN	Surface Radio Navigation
SRS	Software Requirements Specification
SSS	System/Segment Specification
STD	Software Test Description

STN	System Track Number
TAC-3	Tactical Advanced Computer, version 3
TCP/IP	Transfer Control Protocol/Internet Protocol
TDA	Tactical Decision Aid
Tdbm	Track Database Manager
TRE	Training Readiness Evaluation
UAE	Unknown Assumed Enemy
UB	Unified Build
UIC	Unit Identification Number
UID	Unique Identifier
UPI	United Press International
URL	Uniform Resource Locator
US	United States
USMTF	United States Message Text Format
VDD	Version Description Document
VECT	Vector
VPF	Vector Product Format
VT	Variable-Time OR Virtual Terminal
WAN	Wide Area Network
WDB	World Data Base
WEX	Weather
WVS	World Vector Shoreline